Carolina Power & Light Company
d/b/a Progress Energy Carolinas, Inc.
(South Carolina Only)

EXPERIMENTAL

DISTRIBUTION SYSTEM DEMAND RESPONSE PROGRAM DSDR-1

The Distribution System Demand Response Program (DSDR) is a system of electric equipment and operating controls to enable PEC to reduce peak load using the distribution system to effectively reduce generation requirements during peak load conditions. DSDR is a new demand side resource included in the annual Integrated Resource Plan and provides an additional resource to meet future energy needs.

DSDR consists of four initiatives to deliver a robust, integrated system of electric equipment and operating controls required to reduce demand with the dependability, consistency, and sustainability needed for a balanced energy strategy:

1. Feeder Conditioning – A five-year feeder-conditioning initiative in the Carolinas that will improve the system by flattening the voltage profile on distribution feeders consisting of:
    - Changing tap line configurations to improve load balance;
    - Installing additional phase wires to balance load;
    - Relocating and adding new line capacitors; and
    - Adding new line voltage regulators.
2. Grid System Design – The installation of sensors and intelligent controls on equipment and substations to retrieve system data and enable remote control commands.
3. IT Systems & Integration – The enhancement of information technology systems and data architecture to enable the transport and analysis of real time electrical data and remote control of equipment to meet system load requirements. This includes Distribution Supervisory Control and Data Acquisition upgrade and replacement and implementation of a Distribution Management System.
4. Telecom – The installation of a new two-way communications system.

DSDR provides the ability to reduce peak demand for the four to six hour periods typical of peak load conditions which would otherwise require peak generation capacity. Customer delivery voltage will be maintained above the minimum requirement when the program is in use by investing in a robust system of advanced technology, telecommunications, equipment, and operating controls. DSDR supports a least cost mix of demand reduction and generation measures that meet system electricity needs. DSDR leverages the latest technologies to develop a Distribution Management System that will process data from line sensors, analyze power flow, determine MW-reduction capability, and execute commands to control and operate equipment to deliver the demand reduction during peak load periods.

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